

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)  
(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference<br>37422WOP00  | <b>FOR FURTHER ACTION</b>   | See Form PCT/IPEA/416                                       |
| International application No.<br>PCT/IB2005/050709   | International filing date ( <i>day/month/year</i> )<br>28 February 2005 | Priority date ( <i>day/month/year</i> )<br>27 February 2004 |
| International Patent Classification (IPC) or national classification and IPC<br><br>Int. Cl.<br><br><i>E04B 1/64</i> (2006.01) <i>E04F 13/00</i> (2006.01) <i>E04B 1/70</i> (2006.01) <i>E04H 9/16</i> (2006.01) |   |   |
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| 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.<br>2. This REPORT consists of a total of 4 sheets, including this cover sheet.<br>3. This report is also accompanied by ANNEXES, comprising:<br>a. <input checked="" type="checkbox"/> ( <i>sent to the applicant and to the International Bureau</i> ) a total of 6 sheets, as follows:<br><div style="margin-left: 20px;"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).<br/> <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.<br/> b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). </div> |  |
| 4. This report contains indications relating to the following items:<br><div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I      Basis of the report<br/> <input type="checkbox"/> Box No. II      Priority<br/> <input type="checkbox"/> Box No. III      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability<br/> <input type="checkbox"/> Box No. IV      Lack of unity of invention<br/> <input checked="" type="checkbox"/> Box No. V      Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement<br/> <input type="checkbox"/> Box No. VI      Certain documents cited<br/> <input type="checkbox"/> Box No. VII      Certain defects in the international application<br/> <input type="checkbox"/> Box No. VIII      Certain observations on the international application </div>   |  |

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|---|---|
| Date of submission of the demand<br>22 December 2005  | Date of completion of this report<br>07 February 2006             |
| Name and mailing address of the IPEA/AU<br>AUSTRALIAN PATENT OFFICE<br>PO BOX 200, WODEN ACT 2606, AUSTRALIA<br>E-mail address: pct@ipaaustralia.gov.au<br>Facsimile No. (02) 6285 3929 | Authorized Officer<br><br>JOHN HO<br>Telephone No. (02) 6283 2329 |

**Box No. I**      **Basis of the report**

1. With regard to the language, this report is based on:

☒ The international application in the language in which it was filed☐ A translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of:☐ international search (under Rules 12.3(a) and 23.1 (b))☐ publication of the international application (under Rule 12.4(a))☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*☐ the international application as originally filed/furnished☒ the description:

pages 1-2, 4-11 as originally filed/furnished

pages\* 3 received by this Authority on 22 December 2005 with the letter of 22 December 2005

pages\* received by this Authority on with the letter of

☒ the claims:

pages as originally filed/furnished

pages\* as amended (together with any statement) under Article 19

pages\* 12-16 received by this Authority on 22 December 2005 with the letter of 22 December 2005

pages\* received by this Authority on with the letter of

☒ the drawings:

pages 1/4-4/4 as originally filed/furnished

pages\* received by this Authority on with the letter of

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☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.3. ☐ The amendments have resulted in the cancellation of:☐ the description, pages☐ the claims, Nos.☐ the drawings, sheets/figs☐ the sequence listing (*specify*):☐ any table(s) related to the sequence listing (*specify*):4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).☐ the description, pages☐ the claims, Nos.☐ the drawings, sheets/figs☐ the sequence listing (*specify*):☐ any table(s) related to the sequence listing (*specify*):

\* If item 4 applies, some or all of those sheets may be marked "superseded."

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

**1. Statement**

|                               |             |     |
|-------------------------------|-------------|-----|
| Novelty (N)                   | Claims 1-40 | YES |
|                               | Claims -    | NO  |
| Inventive step (IS)           | Claims 1-40 | YES |
|                               | Claims -    | NO  |
| Industrial applicability (IA) | Claims 1-40 | YES |
|                               | Claims -    | NO  |

**2. Citations and explanations (Rule 70.7)**

The following documents identified in the International Search Report have been considered for the purposes of this report:

D1 – US 5369924  
D2 – US 3236932  
D3 – US 6430885  
D4 – US 6308486  
D5 – US 5517795  
D6 – JP 2002-97732

**NOVELTY (N)**

The present invention is directed to an elongate batten and a method of building construction using a batten for positioning intermediate an inner wall framing member and an outer wall cladding sheet and having at least one longitudinally extending channel to facilitate migration and drainage of moisture *between* the batten and the framing member along the length of the batten.

None of the prior art discloses the features of the present invention.

The closest art, D1, refers to a curtain-wall system having frames (20) and sub-frames (36) wherein channels (30) are formed within the frames (20) to discharge fluids which had penetrated the seals on the external surface of the glass panes. The channels (30) however are formed on the frame member and not on the sub-frames (36).

D2 refers to the use of furring strips (24) having a longitudinal channel for attachment to a stud or sheathing. There is no explicit teaching in D2 that this channel can facilitate the migration and drainage of moisture between the strip (24) and the sheathing or stud member.

D3 refers to the use of an engaging member (10) provided with a longitudinal channel. This longitudinal channels however is directed away from the framework and thus is not designed to facilitate the migration and evaporation of moisture *between* the engaging member/stud and the framework as defined in the claims.

Therefore, the subject matter of claims 1-40 is new and meets the requirements of Article 33(2) of the PCT with regard to novelty.

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

**INVENTIVE STEP (IS)**

Claims 1-40 also meet the criteria set out in PCT Article 33(3) with regard to the requirement of Inventive Step because the prior art does not obviously suggest to a person skilled in the art the use of a batten having at least one longitudinally extending channel to facilitate migration and drainage of moisture *between* the batten and the framing member along the length of the batten.

**INDUSTRIAL APPLICABILITY (IA)**

The claims are related to products capable of commercial application.

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necessary gaps, inclinations, and tolerances to allow the process to occur as intended. In practice, this does not always happen.

5 A further problem relates to corrosion of metal fasteners. The usual method of treatment for timber battens exposed to moisture for prolonged periods involves the use of an acidic solution of copper, chromium and arsenate (CCA), which is designed to fully penetrate the timber under external pressure. If timber treated in this way remains wet for prolonged periods, as is typically the case in the present context, standard galvanized nails or screws become corroded to an unsatisfactory degree. In order to ameliorate this problem, it is possible to use stainless steel nails. However, 10 this adds significantly to the cost of materials. Furthermore, stainless steel nails are typically not available in collated magazine form for use in nails guns. Consequently, in such situations, the builder must nail the battens to the cladding sheets by hand. This is time-consuming, inconvenient, and adds significantly to the labour as well as the material cost.

15 It is an object of the present invention to provide a batten and associated framing method, which overcomes or substantially ameliorates one or more of these disadvantages of the prior art, or at least provides a useful alternative.

#### **Brief Summary of the Invention**

20 Accordingly, in a first aspect, the invention provides an elongate batten adapted for positioning intermediate an inner wall framing member and outer wall cladding sheet to facilitate dispersion and evaporation of moisture from a wall cavity, said batten including at least one longitudinally extending channel to facilitate migration and drainage of moisture between the batten and the framing member along the length of the batten.

25 Preferably, the channel is formed in an inner surface of the batten adapted for face-to-face engagement with an adjacent outer surface of the underlying framing member. Alternatively, the channel may be formed in an outer surface of the batten adapted for face-to-face engagement with an adjacent inner surface of the overlying cladding sheet. In a further alternative, the channel may extend through the batten.

30 Preferably, the batten includes a plurality of such longitudinal channels disposed in generally parallel side-by-side

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## CLAIMS

1. An elongate batten adapted for positioning intermediate an inner wall framing member and an outer wall cladding sheet to facilitate dispersion and evaporation of moisture from a wall cavity, said batten including at least one longitudinally extending channel to facilitate migration and drainage of moisture between the batten and the framing member along the length of the batten.
2. A batten according to claim 1, wherein the channel is formed in an inner surface of the batten adapted for face-to-face engagement with an adjacent outer surface of the underlying framing member.
3. A batten according to claim 1, wherein the channel is formed in an outer surface of the batten adapted for face-to-face engagement with an adjacent inner surface of the overlying cladding sheet.
4. A batten according to claim 1, wherein the channel extends through the batten.
5. A batten according to any one of the preceding claims, including a plurality of said longitudinal channels disposed in generally parallel side-by-side relationship and extending along substantially the entire length of the batten.
6. A batten according to claim 5, wherein the longitudinal channels are respectively formed between adjacent pairs of a corresponding plurality of longitudinal ridges, said ridges collectively defining the inner surface of the batten.
7. A batten according to any one of the preceding claims, wherein said at least one channel includes a generally transverse channel to facilitate migration and drainage of moisture across the batten.
8. A batten according to claim 7, wherein said transverse channel is formed in the inner surface of the batten adapted for face-to-face engagement with the adjacent outer surface of the framing member.

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9. A batten according to claim 7, wherein the transverse channel is formed in an outer surface of the batten adapted for face-to-face engagement with an adjacent inner surface of the overlying cladding sheet.

5 10. A batten according to claim 7, wherein the transverse channel extends through the batten.

11. A batten according to any one of claims 7 to 10, including a plurality of said transverse channels disposed in generally parallel side-by-side relationship.

10 12. A batten according to claim 11 when dependent upon claim 6, wherein the transverse channels are defined by a corresponding series of openings formed in the respective longitudinal ridges.

13. A batten according to claim 12, wherein the openings defining the respective transverse channels are transversely aligned.

14. A batten according to claim 12, wherein the openings defining the respective transverse channels are transversely staggered.

15 15. A batten according to any one of claims 11 to 14 when dependent upon claim 5 or claim 6, wherein the transverse and longitudinal channels form a ventilation and drainage matrix adapted to permit migration of moisture in liquid or vapour form across, along and through the batten.

20 16. A batten according to claim 15, wherein the longitudinal and transverse channels are disposed in generally orthogonal relationship.

17. A batten according to claim 15 or claim 16, wherein at least some of the transverse and longitudinal channels respectively intersect.

25 18. A batten according to any one of the preceding claims, being formed from a plastics material adapted to resist moisture permeation, and adapted to be readily cut to desired lengths using conventional sawing tools.

19. A batten according to any one of the preceding claims, incorporating pre-

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lines of weakness disposed at predetermined intervals, to permit the batten to

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be manually divided into small sections of desired length, without the need for cutting or sawing.

20. A batten according to any one of the preceding claims, being formed substantially from PVC.

5 21. A batten according to any one of the preceding claims, being formed substantially from FRC.

22. A batten according to any one of the preceding claims, being between 30 and around 60mm in width.

10 23. A batten according to any one of the preceding claims, being approximately 45mm in width.

24. A batten according to any one of the preceding claims, being between 10mm and around 30mm in thickness.

25. A batten according to any one of the preceding claims, being approximately 19 mm in thickness.

15 26. A batten according to any one of the preceding claims, including three longitudinal channels, each being approximately 9.5 mm in width and approximately 17 mm in height, defined by respective intermediate ridges being approximately 2.5 mm in thickness.

20 27. A batten according to claim 26, wherein the transverse channels are defined by a series of cutouts in the ridges, each cutout being generally U-shaped with a length of around 20mm and a height of around 8mm, the cutouts being spaced apart along the respective ridges with approximately 50mm between centers.

28. A batten according to claim 27, wherein corresponding cutouts on adjacent ridges are staggered.

25 29. A batten according to any one of the preceding claims, having any preformed length of around 2400mm, and being adapted for division into smaller predetermined lengths on-site.



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30. A batten according to any one of the preceding claims, wherein the outer surface is grooved, to facilitate the downward passage past the batten of water passing along the inner surface of the outer cladding material.

31. A method of building construction, said method comprising the steps of:-

- 5       forming a structural frame from framing members, such that the framing members define cavities therebetween;  
          securing a plurality of battens as defined in any one of the preceding claims to outer surfaces of at least some of the framing members;  
          applying an outer cladding material to substantially cover the framing  
10       members and the battens; such that the battens collectively form a clearance space between the framing members and the cladding material;  
          the battens thereby facilitating drainage and ventilation of the cavities.

32. A method according to claim 31, wherein the structural frame is formed substantially from a material selected from the group comprising timber, metal, FRC  
15       and plastics, and wherein the method is employed to construct a wall section of a building.

33. A method according to claim 31 or claim 32, wherein the cladding material is FRC sheet.

34. A method according to any one of claims 31 to 33, wherein the battens are  
20       secured so as collectively to cover more than approximately 50% of the combined outer surface area of the framing members to which the method is applied.

35. A method according to any one of claims 31 to 34, wherein the battens are secured to the framing members by a fastening technique selected from the group comprising nailing, screwing, tacking, stapling, gluing, welding, chemical bonding,  
25       frictional engagement, and mechanical engagement.

36. A method according to any one of claims 31 to 35, including the further step of applying an internal lining material such that the framing members are effectively sandwiched, directly or indirectly, between the external cladding material and the internal lining material.

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37. A method according to claim 36, wherein the internal lining material is plasterboard.
38. A method according to any one of claims 31 to 37, including the step of pre-attaching the battens to the cladding sheets to form a batten and cladding sub-assembly, and subsequently securing the sub-assembly to the frame.
39. A method according to any one of claims 31 to 38, including the step of forming the channels in the batten by a process selected from the group comprising: extruding; machining; milling; routing; casting; moulding; and fabricating; or a combination of those processes.
40. A building or building section, constructed in accordance with the method as defined in any one of claims 31 to 39, using battens as defined in any one of claims 1 to 30.